

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>1304.P004PCT  | FOR FURTHER ACTION   | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416). |
| International Application No.<br>PCT/SG2003/000063   | International Filing Date<br>(day/month/year)<br>28 March 2003 | Priority Date (day/month/year)<br>3 April 2002   |
| International Patent Classification (IPC) or national classification and IPC<br>Int. Cl. 7 G01N 21/01,21/77,21/94, G01J 3/42 |  |  |
| Applicant<br>NTU VENTURES PRIVATE LIMITED et al  |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheet(s).

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

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|---|---|
| Date of submission of the demand<br>18 July 2003  | Date of completion of the report<br>16 January 2004                   |
| Name and mailing address of the IPEA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaaustralia.gov.au<br>Facsimile No. (02) 6285 3929 | Authorized Officer<br><br>S. T. PRING<br>Telephone No. (02) 6283 2210 |

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SG2003/000063

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

the international application as originally filed.

the description, pages 1-24, as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of

the claims, pages 25-28, as originally filed,  
pages , as amended (together with any statement) under Article 19,  
pages , filed with the demand,  
pages 29,30, received on 18 December 2003 with the letter of 18 December 2003

the drawings, pages 1/6-6/6, as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of

the sequence listing part of the description:  
pages , as originally filed  
pages , filed with the demand  
pages , received on with the letter of

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

the language of publication of the international application (under Rule 48.3(b)).

the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4.  The amendments have resulted in the cancellation of:

the description, pages

the claims, Nos.

the drawings, sheets/fig.

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |             |     |
|-------------------------------|-------------|-----|
| Novelty (N)                   | Claims 1-24 | YES |
|                               | Claims      | NO  |
| Inventive step (IS)           | Claims 1-24 | YES |
|                               | Claims      | NO  |
| Industrial applicability (IA) | Claims 1-24 | YES |
|                               | Claims      | NO  |

**2. Citations and explanations (Rule 70.7)**

**Novelty and Inventive step**

US 6 103 535 discloses an optic fibre with a tapered region whose outer protective coating has been removed has a coating for chemically bonding with fluorophores. The fluorescence generated when light is transmitted in the fibre is coupled back into the fibre for detection.

EP 75 353 discloses an optic fibre with a coating specifically reactive to the analyte being determined in contact with its core, the amount of analyte being determined by correlation with a function of time and light transmitted. See claim 3 and fig 10b.

GB 2 103 786 discloses an optic fibre core with a chromophore bonded to its surface with is responsive to the parameter being monitored. The core has a porous flattened end with a reflective layer at its end for light to remerge altered in its colour or fluorescent content.

WO 98/54573 discloses a tapered optic fibre with a portion of cladding removed to allow the core to contact a coating layer for chemically reacting with fluorophores.

US 5 854 863 discloses fibre with their cladding removed being treated with fluoropolymers for the detection of biological compounds by the alteration of conveyed light

None of the above art discloses the actual transformation into another compound which releases light, in a coating on a fibre as a sensor. Therefore claims 1-24 can be said to be novel and to have an inventive step.